

CLAIMS

1. An electrode material represented by a composition formula $A_xB_yC_z$, characterized in that

5 A consists at least one element selected from Group 1B metal elements,

B consists at least one element selected from Group 8 metal elements, and

10 C consists at least one element selected from S and Se,

wherein mole ratios X, Y, and Z are such that $X+Y+Z=1$, $0.20 \leq X \leq 0.35$, $0.17 \leq Y \leq 0.30$, and $0.45 \leq Z \leq 0.55$.

2. An electrode material according to claim 1,
15 characterized in that said A comprises Cu, and said B comprises Fe.

3. An electrode material according to claim 1 or 2,
characterized in that said electrode material has a
20 chalcopyrite structure.

4. A semiconductor element characterized by having a structure wherein a Group II-VI compound semiconductor and the electrode material according to any of claims 1 to 3 are
25 in contact with each other.

5. A semiconductor element characterized by comprising

a semiconductor having a Group II-VI compound semiconductor layer at at least an outermost surface layer, and

5 the electrode material according to any of claims 1 to 3 which is in contact with said semiconductor via said Group II-VI compound semiconductor layer.

6. A semiconductor element characterized by comprising a semiconductor having a Group II-VI compound 10 semiconductor layer at at least an outermost surface layer, and

15 a hole-injection electrode portion placed in contact with said semiconductor via said Group II-VI compound semiconductor layer and made of a solid solution material of a compound $A_xB_yC_z$ in the form of the electrode material according to any of claims 1 to 3 and a Group II-VI compound semiconductor.

20 7. A semiconductor element according to claim 6, characterized in that components of said compound $A_xB_yC_z$ in said hole-injection electrode portion decrease continuously or stepwise from the surface toward said Group II-VI compound semiconductor layer.

25 8. A semiconductor element according to any of claims 4 to 7, characterized in that the Group II-VI compound semiconductor contains at least Zn as a Group II element and

at least one element selected from S and Se as a Group VI element.

9. A semiconductor element characterized by having a
5 structure wherein a Group III-V compound semiconductor and
the electrode material according to any of claims 1 to 3 are
in contact with each other.

10. A semiconductor element characterized by having a
structure wherein an organic semiconductor and the electrode
material according to any of claims 1 to 3 are in contact
with each other.

11. A semiconductor element according to any of claims 4
15 to 10, characterized in that said semiconductor element is a
semiconductor light-emitting element.